

430718

## MIDLAND HEALTH DEPARTMENT

125 WEST MAIN STREET • MIDLAND, MICHIGAN 48640 • 517-835-7781

February 26, 1979

Mr. Larry Thornton, Supervisor  
Region II Headquarters  
Department of Natural Resources  
P.O. Box 128  
Roscommon, Mi. 48653

Re: Dow Chemical Landfill

Dear Larry;

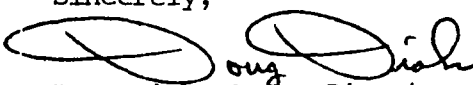
Enclosed are two sets of plans and specifications submitted to this office by the Dow Chemical Company. I am retaining one set for my files. They are requesting licensure of their existing landfill.

I have visited this landfill in the past and have observed an excellent operation. Apparently this landfill has been in existence for many years and this office is not aware of any complaints regarding their operation.

In reviewing the enclosed set of plans and data, I find the information quite complete and it appears quite accurate.

Should you have any questions, please feel free to contact me.

Sincerely,

  
Doug Diak, R.S., Director  
Environmental Health Division

DD:pm  
Enclosures

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cc: Caden

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*Received from Lang  
on April 4, 1979  
BPS -*

Date \_\_\_\_\_

LAND EVALUATION SURVEY FORM  
FOR  
PROPOSED SANITARY LANDFILL AREA

County Midland Township Midland Section# 29

Site Location \_\_\_\_\_  
\_\_\_\_\_

Name & Address of Developer \_\_\_\_\_

Name & Address of Owner Dow Chemical Company, Midland, Michigan 48640

Areas to be Serviced Dow Chemical Company Michigan Division Population \_\_\_\_\_

Size of Property 108 Acres. Type of Terrain flat  
(rolling, flat, lowland, etc.)

Distance To: Residential Property 200 feet Public Gathering Place \_\_\_\_\_  
Public Highway 1200 feet Nearest Well 200 feet (depth) \_\_\_\_\_  
Population Center 1/2 mile (622 Irelan Lane)

Type of Soil: Sandy X Gravel \_\_\_\_\_ Clay X Other \_\_\_\_\_

Water Conditions: Depth to water table 1 boring/25 feet Surface Water on Premises no

Will proposed operation affect surface water runoff? yes

Cover Material: Type sand & clay Sufficient on Property yes

To be hauled in \_\_\_\_\_

General: Will final elevation do damage to adjoining property? no

Patterson Road  
Access roads to property Poseyville Road Proper zoning of Area yes

Future Site Use \_\_\_\_\_ Estimated Life of Property 10 years

Section Location: \_\_\_\_\_ Notes and Recommendations on use of property \_\_\_\_\_


Section # 29

Inspected By: \_\_\_\_\_ Representing: \_\_\_\_\_

Title: \_\_\_\_\_ Address: \_\_\_\_\_

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## Description

The Michigan Division of the Dow Chemical Company operates a landfill as a means of disposal of solid wastes of Types II, III and IV. The landfill is located in the N 1/2 of the N 1/2 of Section 29 in Midland Township, Midland County. The fenced portion of the property used for landfill comprises ~108 acres. Primary access to the property is by Poseyville Road across Dow property. Access is by Dow employees only using Dow trucks and equipment. The use of this landfill is limited to solid wastes generated by The Dow Chemical Company. Soil borings indicate soil conditions compatible with the use of the property for landfill. Generally speaking, the soil is loose to medium compact fine to medium sand over 20 - 30 feet of stiff gray silty clay (soil boring data and soil profile are attached). The clay layers are of very low permeability with boring samples indicating permeabilities from  $3 \times 10^{-7}$  to  $5 \times 10^{-10}$  cm/sec..

The landfill area is ditched to provide drainage for surface water and to collect any leachate. The ditches drain to a sump and then flow underground to a lift station where plant sewage is pumped across the river to the sewer system and Dow's Waste Treatment Plant.

Access to the landfill is limited to Dow equipment operated by Dow employees and is available day and night for seven days a week, although it may be limited to weekday operation in the future. Both the area fill and ramp fill methods are used.

In the ramp fill method, the materials are discharged at the base of the working face and spread from the bottom up. The dozer spreads the waste at the base of the slope, then compacts it and moves dirt from the base to cover the waste.

In the area fill method the dozer spreads and compacts the waste, but the cover material is hauled to the site by truck or other equipment. The landfill site is compacted and covered daily. The landfill is operated in such a way that nuisances and/or hazards to health and safety are avoided by confining the operation to the smallest practical area and compacting the waste to the smallest practical volume.

Labelled and lined containers of asbestos materials are placed in designated areas in the landfill and the area is posted according to State and Federal regulations. There are explicit operating instructions for proper handling and disposal of asbestos containing materials.

The landfill is patrolled routinely by Plant Security and Environmental Services personnel. Any fires occurring in landfill are classified as an emergency and Plant Security, Dow Fire Department and operations personnel respond. The minimum equipment sent to a landfill fire is one dozer, one loader and two dump trucks. No wastes are hauled to the landfill in such an emergency until the area is back to normal.

Based on 1977 and 1978 records, the monthly average volume of waste to Dow's landfill is 10,200 yd.<sup>3</sup>. Using eight feet as a lift, this amounts to a rate of completion of landfill operation of 0.79 acres/month/lift or 1.26 months/acre/lift. The life of this landfill site is estimated at ten years.

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## Operating Plan

Landfill operations are carried out by the road maintenance group of the Plant Services Section under supervision of the Environmental Services Department. Dow vehicles and equipment only are used in the landfilling operation. Access to the area is limited. The landfill is fenced and under the surveillance of Dow's Security and Plant Protection Department.

Waste is segregated at its source. The waste handling at its source must conform with prescribed procedures or it isn't hauled to landfill. Waste can be given normal or special handling. Since waste is handled on a 24 hour/day, 7 day/week schedule, there is no special handling of waste at night or on weekends. All material must be identified at the source before disposal.

Sand and clay are stored on the site to be used as cover material. Wastes are segregated so materials can be excluded which may not compact. Films and easily airborne materials are not landfilled on windy days to avoid material blowing off the landfill. If this becomes a problem during landfilling operations, the problem area is covered with sand.

Landfilling is a 24 hour/day, 7 days/week operation with limited hauling at night and on weekends and holidays. The operator is present on day shift only five days/week. Equipment operators are on call and available to operate the equipment at the landfill during off-hours if needed.

Landfilled wastes are covered with eight inches of sand and powerhouse ash as appropriate or once a day on the day shift. Operating strategy is to cover all four sides of the fill (cell) as a fire break. A cell is ~75 feet

wide and as long as the area allows. Limiting a cell width to 75 feet limits the hauling activity at night and on weekends.

As parts of the landfill reach final grade, they are covered with 1-1/2 feet of clayey top soil, graded and seeded. Final grading is done to prevent erosion and ponding of water. Final grading is done with a shallow slope towards the drainage ditches to allow surface drainage without erosion.

Rubber-tired equipment is used in the landfiling operation for better compaction than that attainable with tracked equipment. The types of equipment used are dump trucks, dumpster trucks, bucket loaders and graders.

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